MIAMI-DADE COUNTY
OFFICE OF PERFORMANCE IMPROVEMENT

GENERAL SERVICES ADMINISTRATION

Construction Management And Rehabilitation Services Division (CMRSD)

Work Order Process Review

- Final Deliverables -

May 2001

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Construction Management and Rehabilitation Services Division (CMRSD) of the General Services Administration (GSA) is responsible for managing major and minor construction, facilities build-out, renovation, design, architectural and engineering services, and building maintenance. These services require management and coordination of an array of internal and external resources (shop trades, professionals, contractors and vendors) to complete construction and build-out projects, and to respond to tenant requests. While there is overlap in resources employed on specific projects, the divergent needs of the various CMRSD workgroups and decentralization of the workforce present significant management challenges to develop and institute systems that can effectively manage, track and report on multiple business activities. In its attempt to track and manage these businesses, GSA developed more than 15 years ago customized automated project management and work order applications. The project management module has been abandoned and the work order program was significantly rewritten more than three years ago to correct programming errors.

The Office of Performance Improvement (OPI) reviewed CMRSD operations and analyzed both the workflow processes and the work management application programs. The results are presented in a series of attachments. Attachment I presents a detailed process map highlighting the areas recommended for improvement. Both the work processes and the software applications require significant revision to realize performance improvements. Details of the individual findings and recommendations are presented in Attachment II and summarized in Table 1 below. Recommendations are categorized as short, medium or long term. Short term (quick hits) recommendations can be completed within six months, medium term solutions are intended to be completed within 6 to 18 months, and long term recommendations require more than 18 months to complete. Table 1 also serves as a preliminary planning tool for assigning responsibility and tracking the recommendations selected for implementation.

As GSA takes steps to improve work processes and its use of technology in CMRSD, the Department should first improve current work processes and then begin automating the improved processes. Our review indicates that there are opportunities for upgrading the current work order and project management systems. However, acquisition of a more modern, user-friendly, error free package is required in the future. The current system is more than 15 years old and requires GSA to maintain specialized in-house support for the programs. Considering the problems that initiated reprogramming three years ago, it is not clear that GSA has complete faith in the current work order package. Additionally, the costs to custom program, debug and commission enhancements, and retain qualified support staff may be prohibitive. New work order packages usually include stores management (inventory) and purchasing modules at no additional cost that can substitute for the current stores module used on the AS400 system. Program planning and scheduling capability should also be built into the application or interfaced with other software tools. GSA will also be required to interface the new package to FAMIS and GSA's accounting application. OPI recommends the following course of action:

1. **Improve current work processes before automating.** This is best achieved by implementing all short term and process related medium term recommendations, reassessing staff resources and addressing training requirements. Detailed recommendations include: working with the Office of Management and Budget to transfer the budget approval process for department specific requests to the requesting department, improving customer feedback, conducting requisite staff training and rewriting selected management reports.

2. **Complete limited enhancements to the current work order system to improve tracking and reporting while procuring a replacement system.** OPI does not recommend customized

development of in-house programs for project management, scheduling and planning. However, we recognize that installing an established off-the-shelf system will take a significant time period to specify, procure and implement. GSA must continue to operate the current system until the transition is complete, hence the recommendation to complete limited enhancements.

3. **Throughout the County, older work management systems (paper and/or partially automated processes) no longer meet departments' requirements.** Several County departments including Water and Sewer, Seaport and Aviation are actively considering implementing new systems. Departments may be able to reduce procurement and maintenance costs by installing a common work management package using enterprise wide licenses. OPI recommends investigating this method of procurement in conjunction with the office of the Chief Information Officer.

During its review, OPI conducted a limited technology assessment of 187 non-manufacturing work order and project management applications and identified six applications that may be suitable for CMRSD (Attachment III). The criteria used for identification and further evaluation were user friendliness, ease in configuration, version control, compatibility with FAMIS, and adaptability for multiple business processes. OPI also considered the adaptability to Job Access for Windows System (JAWS), a voice over system being used by visually impaired staff. GSA may consider evaluating the following six applications.

Computerized Maintenance Management Systems Alternatives

Application	Vendor	Pricing
Web Work	Tero Consulting Ltd.	$7,000 plus $900/user
MAXIMO Enterprise	MRO Software	$7,500/user
Synergen Series	Synergen, Inc.	$75,000 plus $4,000/user
CHAMPS EAM	CHAMPS Software	$17,500 plus 10,000/user
MP5i	Datastream	$3,000/user
FM 1 INNOVUS	Caver-Morehead Systems, Inc.	$39,800

Note: Pricing reflects application licensing costs only. Hardware, installation, maintenance and training costs are not included. Additionally, maintenance charges may be as high as 20% of package costs.

Three other software packages were also assessed because they offer facilities and space planning capabilities: Peregrine Systems (FacilityCenter), HCI Systems (Building Blocks), and PM Associates (ProTec). These systems enabled preplanning of buildings through Computer Aided Design (CAD) without additional interfaces.

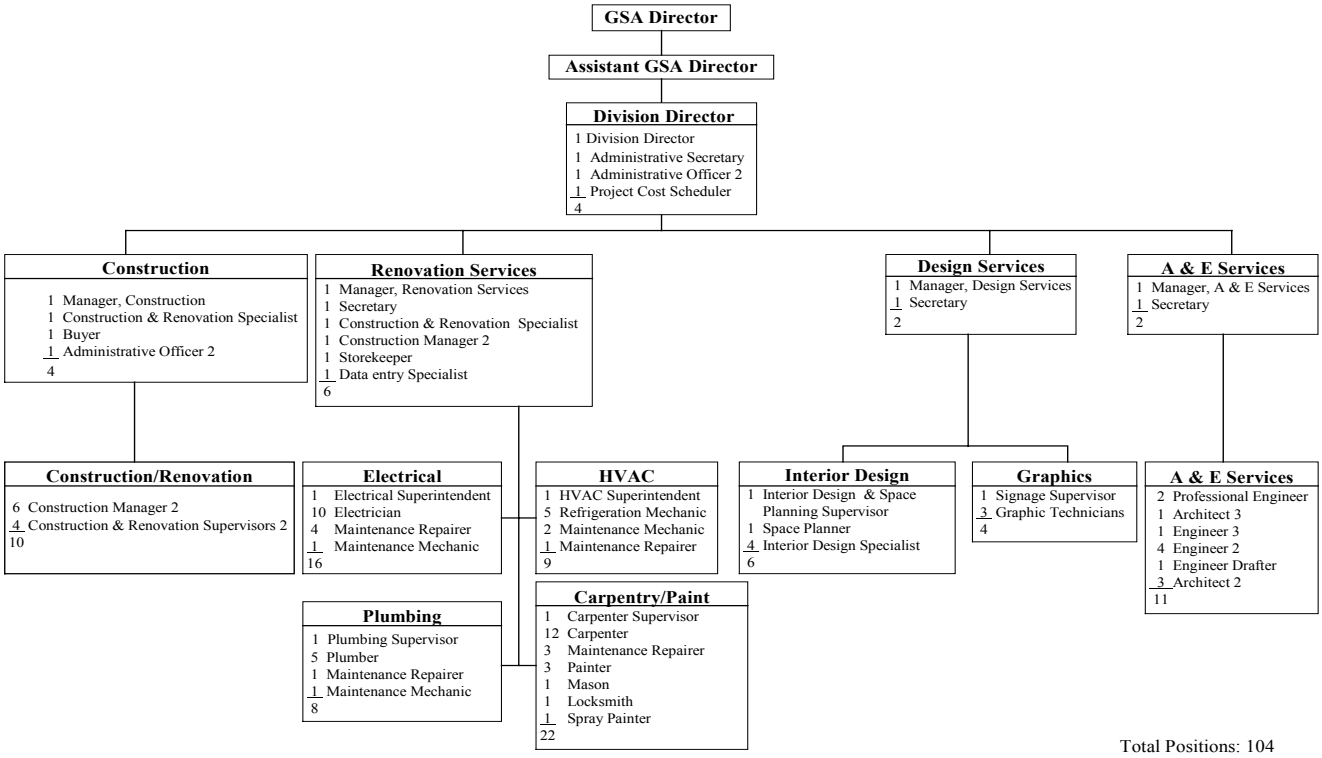
While a new work order system will improve the ease of use, management reporting, and the method of requesting, scheduling and tracking work, it is unrealistic to assume any new system will significantly reduce job turnaround time. This is largely because issues related to staffing, procurement, minority business processes and building permits add significant delays to task completion and impact the timeliness of data entry.

BACKGROUND

County departments requiring work to be completed on county buildings request repairs, renovations and construction services through the General Services Administration (GSA). Work requests are entered in the work order management system and include maintenance, space remodeling, renovations, relocations and signage. Consequently, GSA functions as a multi-service company operating several businesses: repair and maintenance, interior design services, architectural services, major and minor construction and relocation services as evidenced in the Table of Organization, Figure 1. CMRSD receives and processes all work requests, however, some service requests (minor lighting maintenance, space conditioning and routine preventive maintenance) are not completed by CMRSD, and therefore are not processed through the work order system.

Figure 1

General Services Administration
Construction Management and Renovation Services Division
Table of Organization
(Effective 10/00)



Departments must request services on a work order or service ticket form that the requestor faxes or mails to CMRSD for review and processing. Since March 1999, GSA began categorizing work requests as "service tickets" and "work orders". Work requests with an estimated cost of $5,000 or less are service tickets. Service tickets are used for interior remodeling, repairs and maintenance of plumbing, electrical fixtures, air conditioners, carpentry, painting, signage and requests for office redesign. Typically, service tickets should be completed promptly, and therefore not be subject to interim billing. Charges incurred in filling these requests are billed in a lump sum when work is completed. From March

1999 through February 2001, a total of 14,500 service tickets have been opened at an average of 30 service tickets per day. GSA recently proposed raising the threshold for service tickets to $10,000.

Work orders are required for the same services as service tickets but for work in excess of $5,000. Typically, work orders are required for major repairs, replacement or renovations of plumbing, roofs, fences, paving, air conditioning systems, office relocation and redesign. Work orders require signed approval from the Office of Management and Budget (OMB) before work can begin. Aside from the spending cap on service tickets, and the need for OMB to approve work orders, a work order differs from a service ticket only in that GSA bills monthly for expenses incurred under a work order. A total of 669 work orders (approximately 29 per month) have been opened over the 24-month period ending February 2001.

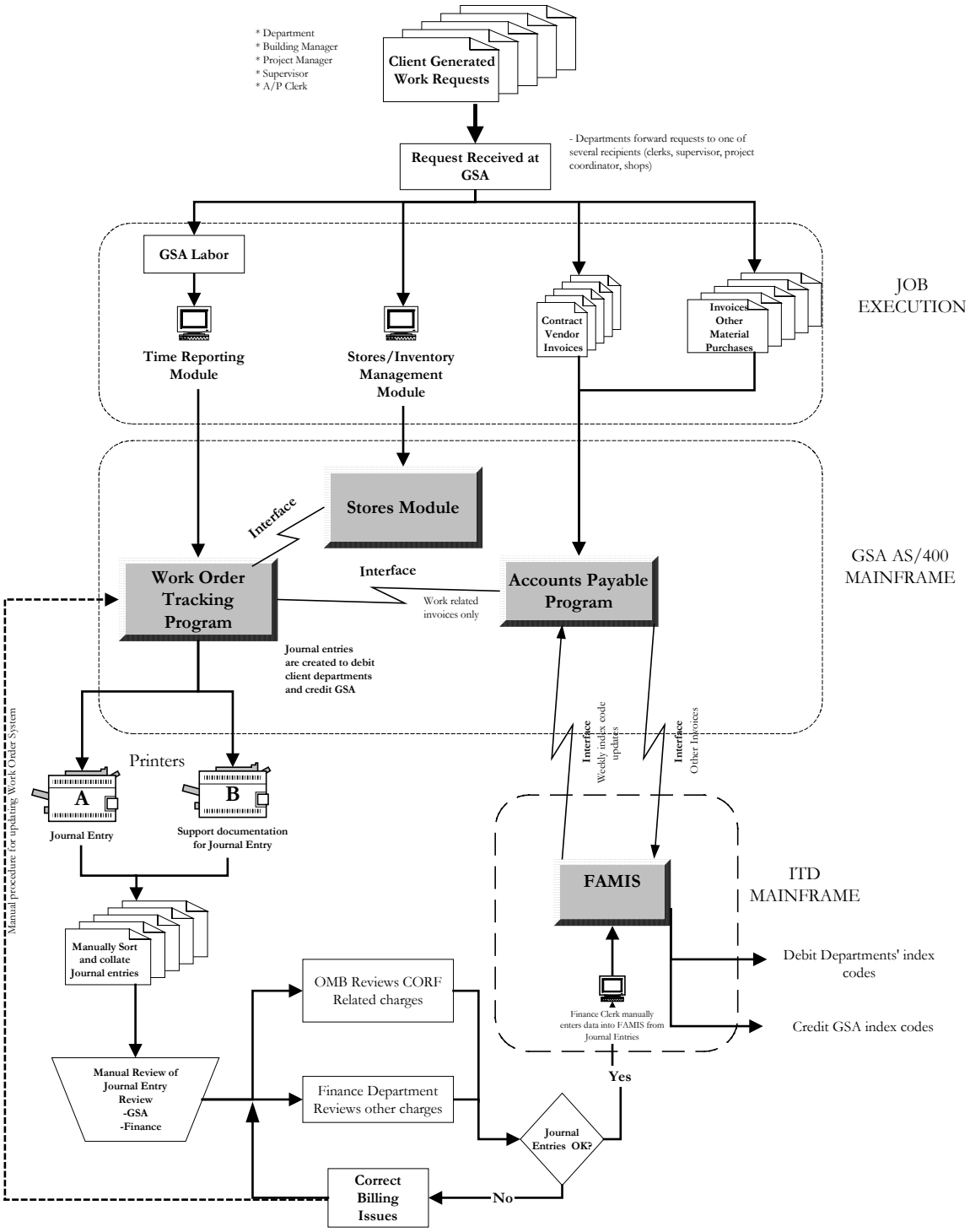
Figure 2 shows the typical work order/service ticket flow process. Work is performed predominantly during normal working hours except for emergencies or if the nature of the task dictates that work has to be performed outside of normal business hours. Building managers, tenants or other GSA staff mail or fax work requests to the CMRSD where the paper request is routed to the appropriate workgroup. The workgroup reviews the request, enters the data on the work order system, notes the work request number and assigns a project manager and lead shop as required. The lead shop or project manager coordinates work with other shops, professional services and contractors as required, procures all material and services, completes and inspects the work.

All labor and materials charges are input into the various data management programs resident on the GSA IBM AS400 computer. Shop supervisors and professional staff enter staff time on the work order system while account clerks input charges from vendor and contractor invoices into the accounts payable system. Charges for materials drawn from GSA stores are accumulated on the stores management system. During the billing cycle, the work order system interfaces with the accounts payable and stores inventory management system, and retrieves all costs related to work requests. The work order system generates and prints hard copies of journal entries. GSA, OMB and the Finance Department review and approve the reported journal entry transactions and forward the data to finance clerks for entry into FAMIS. FAMIS then debits departmental accounts and credits GSA work group accounts accordingly.

In October 2000 GSA requested the Office of Performance Improvement (OPI) to review the work order process and computerized systems, and to provide recommendations for improving work management and job execution. GSA management raised concerns about its ability to monitor performance, maintain appropriate levels of fiscal control, and create accountability in the work order cycle using the existing work order system. To address these concerns, GSA began searching for off-the-shelf software. The Department asked OPI to evaluate the existing work order processes in light of these and other improvement needs.

Figure 2

General Services Administration
Construction Management and Renovation Services
Work Order Process



PURPOSE AND SCOPE

OPI reviewed the work order processes (service requests, service tickets, work orders, maintenance and construction management), including equipment and computer programs and made recommendations for improvement. This includes a detailed review of the current work order processes and preparation of a detailed process flow diagram to identify bottlenecks and areas where process improvements are possible. OPI also conducted a technology search and a limited comparative survey of work order processes in other private and public entities to identify current practices and computer software packages in use.

The following deliverables are included:

- Summary of Findings and Recommendations (Table 1)
- Attachment I – Process Map
- Attachment II – Detailed Findings and Recommendations
- Attachment III – Assessment of Work Order Management System Alternatives
- Attachment IV – Work Order Processes in Selected Jurisdictions

Table 1
Summary of Findings and Recommendations
Review of GSA Work Order and Service Ticket Process

Process Issues	Recommendations	Short Term	Medium Term	Long Term	Staff Assigned	Comments
WORK ORDER AND PROJECT MANAGEMENT PROCESSES **Service Request Intake**						
1. High probability of departments submitting work requests to an incorrect work group	Designate central intake points for all work requests	✓				
2. Work requests can be initiated by any client department personnel thereby creating duplicates	Designate single liaisons at departments to submit work requests and co-ordinate with GSA	✓				
3. Work requests are made on paper forms	Provide all department liaisons electronic access to work order system and training if needed		✓			
4. No automatic feedback to customer after work request is submitted	Notify customer of job receipt and number by phone, e-mail and/or through electronic access	✓				
5. Multiple types of forms are used to enter jobs	Use single form for all types of jobs Develop electronic version of the form	✓	 ✓			
6. There is no automatic system to identify duplicate work requests	Establishing a single department liaison will minimize duplicates Install a new work order package with this capability	✓		 ✓		
7. GSA personnel initiate work requests on behalf of others or for internal billing purposes	Institute additional controls to minimize and control internal work requests		✓			
8. Preventative maintenance and service requests handled internally by building managers are not integrated with other GSA systems	Integrate preventative maintenance and building manager completed work with GSA work order system			✓		

Process Issues	Recommendations	Short Term	Medium Term	Long Term	Staff Assigned	Comments
Work Request Processing And Approval						
1. GSA may open a service ticket solely to prepare job estimates – if job is executed on subsequent work order, costs for estimate may not be collected	Institute a system with a parent-child work order relationship		✓*	✓		
2. Paper-driven process – i.e. service tickets at "Shops" are transcribed on to new paper form, then entered into system	Increase training to make the best use of technology and minimize transcription time Create electronic forms on work order system for this process		✓ ✓	 ✓		
3. Supervisors do not primarily use the system to obtain information about certain jobs	Increase training to make the best use of technology Review roles and responsibilities	✓ ✓				
4. Manual review of service tickets to check for completeness	Increase the number of status options on the work order system for service tickets		✓			
5. GSA obtains OMB approval for work orders on behalf of departments	Discontinue this service. Open a service ticket for the initial work and signed estimate	✓				
Job Execution And Status Tracking						
1. Customers and building managers are not automatically informed of progress	Require field staff to provide more information to customers at site. Also, require lead shops and project managers to follow-up where needed. Institute controls to encourage compliance	✓				
2. Customers interested in job status cannot track jobs electronically	Notify customer of job receipt and number by phone, e-mail and/or through electronic access Improve status codes, include descriptive comments and encourage employees to the update system as needed	✓ ✓	 ✓			

Key: Short Term: 0 to 6 months, Medium Term: 6 to 18 months, Long Term: over 18 months
✓* - Implement only if GSA will not purchase a new system

Process Issues	Recommendations	Short Term	Medium Term	Long Term	Staff Assigned	Comments
3. Regular work order planning meetings no longer held	Re-institute regular work order meetings at least monthly	✓				
4. Status options for work orders and service tickets are inadequate and include no update information	Improve status codes, include descriptive comments and encourage employees to update system as needed		✓*			
5. Software packages are difficult to use, time-consuming and cumbersome	Create Windows overlay (depending on the desire to enhance old systems or purchase new systems) Install new windows, based systems			✓* ✓		
6. Staff workload directly impacts backlog and lack of communication to customers	Rebalance workloads, increase technology training, examine ways to reduce delays caused by departments external to GSA	✓	✓			
7. CMRSD applications provide no scheduling, planning, or resource allocation functions	Purchase and install a new work management system to include these functions			✓		
8. Preparation of management reports is manual. (Laborious, time consuming and error prone)	Management, users and MIS staff should collaborate on creating a limited number of more useful and important management reports. The same will be required for specialized reports on any new application		✓	 ✓		
Contractor Invoicing And Client Billing						
1. Vendor invoices are not mailed to a single location in GSA	Designate a single mailing point at SPCC and at GSA shops Develop a single database to be used by both sites for logging and tracking invoices	✓	 ✓			
2. Some invoices related to work orders may be processed without resulting in a corresponding debit to client accounts	Create standard operating procedures to obtain invoice approval See Technology Issues below		✓*	 ✓		

Key: Short Term: 0 to 6 months, Medium Term: 6 to 18 months, Long Term: over 18 months
✓* - Implement only if GSA will not purchase a new system

Process Issues	Recommendations	Short Term	Medium Term	Long Term	Staff Assigned	Comments
vendors on county processes and quality requirements	Form joint training teams with other departments to train CSBE firms on county procedures. Also publish these guidelines on the internet		✓			
4. Inadequate interfacing between FAMIS, the accounts payable module, and the work order system	Work order module should upload billing data to accounts payable and then to FAMIS		✓*	✓		
5. Index codes uploaded by FAMIS to the accounts payable system are not automatically updated on work order system	See above		✓*	✓		
6. Index codes on journal entries fed into FAMIS are not automatically corrected on work order module	See above		✓*			
7. GSA forwards journal entries for capital spending to OMB for review and non-capital spending to Finance	Code CORF billing for automatic segregation to journal entries and allow OMB to electronically review and approve		✓	✓		
8. Invoices arriving after service orders are closed are billed by creating new service tickets or by re-opening the work order	Institute additional controls to manage this process	✓				
9. It is difficult and laborious to provide billing details on-request where customers require support documentation for amounts debited	Review and develop methods of preparing billing reports to be generated on request		✓			
TECHNOLOGY ISSUES **Use of Available Software Packages**						
1. Work order tracking systems is not fully utilized	Increase employee systems training and integrate manual processes with current technology	✓				
	Purchase and install new work management systems			✓		
	Create useable management reports	✓				

Key: Short Term: 0 to 6 months, Medium Term: 6 to 18 months, Long Term: over 18 months
✓* - Implement only if GSA will not purchase a new system

Process Issues	Recommendations	Short Term	Medium Term	Long Term	Staff Assigned	Comments
2. Parts of project management system are redundant and the Access-based rewrite was not commissioned for use	Determine if Access based project management package meets user needs and can interfaced directly to the work order tracking system Purchase and install new work management systems that provides project management planning and scheduling functions		✓*	 ✓		
3. Project management and resource reports are manually prepared in Word and Excel	Investigate auto-report generation Purchase software for work order tracking, project management, planning and scheduling	✓*		 ✓		
Incompatibility Between Applications						
1. The work order module and project management programs are incompatible	Purchase and install new work management system that also provides project management planning and scheduling functions			✓		
Unique System Capabilities						
1. The system bills client departments for work on service tickets only after they are closed (no interim billing) while work done on work orders is billed monthly	This capability is immaterial and may not have to be a requirement if a new system is purchased.			✓		
2. Creates journal entries for billing purposes (works opposite to normal work management systems)	Change process if a new package is implemented. See Invoicing, item 4 above and System Limitations, item 3 below.			✓		
3. Doubles as a time reporting system and also prevents staff from accounting for less than 40 hours per week.	Though new packages report time, they are not time reporting packages. Any new package will require a separate time reporting system.			✓		
4. Offers no link between service tickets and/or related work orders to track aggregate project costs (parent-child relationship)	Develop capability Specified capability in new software package		✓*	 ✓		

Key: Short Term: 0 to 6 months, Medium Term: 6 to 18 months, Long Term: over 18 months
✓* - Implement only if GSA will not purchase a new system

Process Issues	Recommendations	Short Term	Medium Term	Long Term	Staff Assigned	Comments
System Limitations						
1. Not user friendly, time consuming and cumbersome	Install Windows-based overlay with drop down menus Purchase a new work management package		✓*	 ✓		
2. Several GSA staff have deleting rights	Institute better control of deleting rights	✓				
3. Journal Entries are manually entered into FAMIS	Redesign process to automate data transfer		✓*	✓		
4. System software capabilities are far below GSA requirements (See Attachment II, Table 1)	One option is to undertake large scale enhancements of the existing systems by expanding custom developments started 15 years ago, auditing, debugging and retesting the entire package. OPI does not recommend this option. (See Attachment II, Table 1) Purchase and install a new work management package		✓*	 ✓		
OTHER ISSUES						
1. Procurement processes add considerable delays and costs	Increase dialog with Procurement Department and jointly develop methods of reducing delays	✓				
2. DBD requirements concerning CSBE and use of MCC can add considerable time and cost	Increase dialog with DBD and jointly develop methods of reducing delays	✓				
3. GSA personnel do considerable "hand-holding" for contractors	Increase available information for vendors so that they can comply with rules. Form joint training teams with other departments to train CSBE on county procedures		✓			
4. GSA customers express dissatisfaction with service	Increase communication with customers and educate them on CMRSD processes and administrative requirements/barriers	✓	✓	✓		

Key: Short Term: 0 to 6 months, Medium Term: 6 to 18 months, Long Term: over 18 months
✓* - Implement only if GSA will not purchase a new system

ATTACHMENT I

GSA Work Order Process Review

- Process Map -

Note: For a complete view of this process map, please remove these pages and connect them according to their page numbers in the following manner:

p. 1	p. 2	p. 3
p. 4	p. 5	p. 6
p. 7	p. 8	p. 9

Table 1
Work Order Systems Needs Assessment
GSA Work Order System Needs And System Capability

Function/Feature	Perception of Features Provided by Current System		Features Required (Users and MIS)
Requesting Work	**Users**	**MIS**	
Automatically generates alpha-numeric work order numbers	⭕	◎	♦
Cost estimate of work order (Automatic)		◎	
Cost estimate of work order (Manual)	⭕		♦
Detect duplicate work orders		◎	♦
Dispatching			♦
Displays assigned work order number on initiation of request	⭕	◎	♦
Individual employee utilization	⭕	◎	♦
On-screen job planning			✓
Parts availability check		◎	✓
Rule based labor scheduling vs. automatic scheduling			✓
Segregates request by contact, type, facility, etc.		◎	✓
Skills resource planning			✓
Work order prioritization	⭕	◎	♦
Work order relationship grouping (Parent-Child relationship)		◎	
Work order schedule and assignment development			✓
Workflow and approval routings		◎	♦
Scheduling			
Ability to schedule PM task for downtime/outage			✓
Automatic assessment of PM schedule adherence			✓
Automatic PM cost accumulation			✓
Automatic PM task descriptions			✓
Equipment Document Management			✓
Equipment Specifications and Parts Lists			✓
Job scheduling/planning by work order priority			✓
Maintenance Requirement Forecasting			✓
Multiple bases (e.g. time, meter) for scheduling PM			✓
Personnel			✓
PM schedule setting on screen			♦
Preventive Maintenance Work Order and Scheduling			♦
Print work due for multiple PM tasks on a single sheet			✓
Project scheduling, tracking and updating			✓
Repetitive work order time slots			✓
Single base for scheduling preventive maintenance			✓
Troubleshooting and fault evaluation			✓
Equipment/Facility History			
Bill of materials data			♦
Drawings			✓
Equipment listings			✓
Equipment specifications data			✓
Graphic displays			✓

Function/Feature	Perception of Features Provided by Current System		Features Required (Users and MIS)
Requesting Work	**Users**	**MIS**	
Maintenance labor history			✓
Maintenance materials cost history			✓
Maintenance materials usage history			✓
Repair cause history			✓
Repair procedure history			✓
Inventory and Other Maintenance Support Functions			
Automatic generation of a store's work order "pick list"			♦
Automatic maintenance procedures library update			♦
Automatic purchase requisition creation			♦
Automatic stores inventory update			♦
Automatic works standards update			♦
Maintenance works standards update			♦
Multiple stores/plant locations			✓
On-order (inventory) status look-up vendor or information		◎	✓
Performance analysis		◎	♦
Facility notification of unused inventory materials from outside purchases		◎	✓
Tracking of maintenance tools and equipment			♦
Used parts inventory		◎	✓
Purchasing			
Accounts summary total			♦
Automatic translation of requisition to purchase order		◎	♦
Automatic work order look-up from purchase order			✓
Create inventory records from requisition/purchase order for new items			✓
Last cost shown on parts re-order			✓
Total dollars purchased from specific vendors			✓
Resource Tracking			
Allocation of service contract and blanket purchase costs to specific accounts		◎	✓
Best fit resource scheduling - automatic			✓
Best fit resource scheduling - manual			✓
Bin-label printing		◎	✓
Blanket purchase expenditures tracking			✓
Critical Spares			✓
Equipment and parts warranty tracking			✓
Service contract activities and costs tracking			✓
Track goods delivered and accounted for		◎	✓
Operating Platforms and Architectural Foundation			
Data centrally located on "server" (clients access live data)		◎	
Desktop solutions		◎	

✓ Features desired by users
♦ Features required by users
O Users' perception of current system capability
◎ GSA Management Information System (MIS) Division's perception of current system capability

Function/Feature	Perception of Features Provided by Current System		Features Required (Users and MIS)
Requesting Work	**Users**	**MIS**	
Easy configuration		◎	♦
Easy data in/out/manipulation		◎	♦
Mainframe		◎	
Maximum number of terminals on one network			
Micro/PC Can be Networked		◎	✓
MS Windows NT Server			
Oracle			
Oracle RDB			
PDA – (Palm etc.)			✓
System is Microsoft Windows Based			✓
Applications With Which CMMS Interfaces			
Barcode data collection			♦
Billing and Invoicing		◎	♦
Construction Estimating Systems		◎	♦
Construction Management Systems		◎	♦
Crediting internal accounts by trade/workgroup			✓
Document Management		◎	✓
Document Scanning			✓
Equipment Management			✓
Facilities Planning System			✓
Graphic Applications			✓
Imaging			✓
Inspection			✓
Personnel/Human Resources			✓
Preventive Maintenance Systems			✓
Project Management			✓
Purchasing			✓
Stores/MMS/inventory			✓
System Operational Environment			
Accepts data from predictive devices/systems			✓
Ad hoc reporting		◎	✓
Bar code input and data management			✓
Browse function in all databases		◎	✓
Built-in data backup and recovery procedures		◎	✓
Built-in help screens keyed to current activity		◎	✓
Customizing report generator		◎	✓
Data and archive compression			✓
Data entry validation		◎	✓
Documents scanning and data management			✓
File retrieval from history		◎	✓
Graphical user interface (GUI)			✓
Multi-facility		◎	✓

✓ Features desired by users
♦ Features required by users
O Users' perception of current system capability
◎ GSA Management Information System (MIS) Division's perception of current system capability

Function/Feature	Perception of Features Provided by Current System		Features Required (Users and MIS)
Requesting Work	**Users**	**MIS**	
Multi-tasking		◎	✓
Multi-warehouse		◎	✓
Object linking and embedding (OLE)			✓
On-line query of the databases		◎	✓
Pop-up windows in all databases		◎	♦
Security for all menu screens (i.e. password protection)		◎	♦
Business Management and Reporting			
Asset Management reports			♦
Downtime Management reports			♦
Equipment Document Management			
Equipment List and identification			♦
Equipment Specifications and Parts Lists			✓
Equipment Utilization			
Facility Monitoring Tracking			♦
Fleet/Vehicle utilization			
Fleets			
General Building contractors		◎	✓
Hazardous/Environmental Materials Tracking			
Hierarchical work order status reporting (Planning, approval, scheduling etc.)		◎	✓
Historical cost and analysis and reporting		◎	♦
Individual employee availability reporting			♦
Individual employee skills reporting			
Individual employee training reporting			
Individual employee utilization	○	◎	♦
Maintenance Cost and Budgeting (BUDGET MANAGEMENT)			♦
Maintenance Requirement Forecasting			✓
Maintenance Troubleshooting and Diagnostics			✓
Materials Management reports	○	◎	♦
Personnel		◎	✓
Predictive Maintenance Analysis			✓
Preventive Maintenance Work Order and Scheduling			♦
Productivity reporting for all resources (e.g. labor, equipment, materials)			♦
Project Management reports		◎	♦
Project scheduling, tracking and updating reporting		◎	✓
Property Management			✓
Safety Compliance Management			
Track and report work by facility	○	◎	♦
Track and report work by shop/trade/division	○	◎	♦
Track and report workload by project manager	○	◎	♦
Warranty Claims Tracking			♦
Work Management report	○	◎	♦
Work order backlog reporting	○	◎	♦
Work order detailed status reporting	○	◎	♦

✓ Features desired by users
♦ Features required by users
○ Users' perception of current system capability
◎ GSA Management Information System (MIS) Division's perception of current system capability

ATTACHMENT II

GSA Work Order Process Review

- Findings and Recommendations -

TABLE OF CONTENTS

SUMMARY

Business processes in the Construction Management and Rehabilitation Services Division (CMRSD) are not optimally streamlined and do not make the best use of available resources. Also, management faces significant challenges in exercising good fiscal control using current computer systems that provide only limited work order management capabilities. Additionally, since the project management system has been abandoned, and since current work order tracking programs are difficult to manipulate, staff continue to rely on manual and paper processes.

The Office of Performance Improvement (OPI) recommends the following:

1. **Improve current work processes before automating.** This is best achieved by implementing all short term and medium term process related recommendations, reassessing staff resources, and addressing training requirements. Detailed recommendations include: working with the Office of Management and Budget (OMB) to transfer the budget approval process for department specific requests to the requesting department, improving customer feedback, conducting requisite staff training and rewriting selected management reports.

2. **Complete limited enhancements to the current work order system to improve tracking and reporting while procuring a replacement system.** OPI does not recommend custom development of in-house programs for project management, scheduling and planning. However, OPI recognizes that installing an established off-the-shelf system will take a significant time period to specify, procure and implement. GSA must continue to operate the current system until the transition is complete, hence the recommendation to complete limited enhancements.

3. **Throughout the County, older work management systems (paper and/or partially automated processes) no longer meet departments' requirements.** Several County departments including Water and Sewer, Seaport and Aviation are actively considering implementing new systems. Departments may be able to reduce procurement and maintenance costs by installing a common work management package using enterprise wide licenses. OPI recommends investigating this method of procurement in conjunction with the office of the Chief Information Officer.

Although a new software application can help realize performance improvements, it is unrealistic to assume that any new system can significantly reduce job turnaround time without realigning resources and improving work processes. Further, other issues related to staffing, procurement, minority business processes and building permits add significant delays to project completion times.

BACKGROUND

CMRSD, a division of GSA, is comprised of five core businesses:

- Major construction projects (buildings, roofing, pavements, fences etc.)
- Minor construction projects and office facility build-out
- Renovation, design, architectural and engineering services
- Building/facilities preventive and prescriptive maintenance
- Relocations and moving services

These services require management and coordination of a wide array of internal and external specialists and trades including engineers, architects, designers, construction/shop trades (painters, mechanical, HVAC, electrical), external contractors and vendors, and the Miami-Dade Information Technology Department (ITD). CMRSD is the result of a merger of two divisions that traditionally used separate work management systems and work processes. Management is faced with the challenge of developing processes and instituting systems that can effectively manage, track and report on multiple business activities while maintaining good customer relations and fiscal control. More than fifteen years ago, GSA developed custom computer applications for work order management, construction management, time reporting, and stores inventory. The construction management programs have been abandoned and GSA reprogrammed a significant portion of the work order tracking software approximately three years ago, primarily to correct billing program errors.

The review of the CMRSD operations included analysis of the workflow processes related to service tickets and work orders, and a review of the construction management and work order computer applications. The following details the findings and recommendations.

WORK ORDER AND PROJECT MANAGEMENT PROCESSES

A. Service Requests Intake

I. Customer Feedback and Coordination of Work Requests

GSA neither provides customers with a job number when service is requested nor does it routinely provide estimated start and completion times. Consequently, it is time consuming and difficult for departments to track job status. For example, we found one manager who obtains information on a single work request by requesting MIS to prepare a report (approximately 400 pages) of all current work orders in order to determine if a job number was assigned to the request in question. Ideally, customers should have electronic access to a work order system that will immediately display a reference job order number once the customer make a service request. This would eliminate the need for paper transactions except in areas where there is no network access.

Recommendations

OPI recommends that departments designate a single staff liaison to coordinate the department's service requests with GSA. These liaisons should have electronic access to the work order system with permission to request services, obtain job numbers and view job status online. Where there is no network access, centralized intake staff should provide a job number verbally, by e-mail or by facsimile.

Departments do not have a single point of contact for routing service requests through GSA, which increases the probability of duplicate requests and makes the coordination among building managers, user departments and CMRSD difficult. For example, CMRSD staff may arrive on site to complete work only to discover the site has not been prepared or is inaccessible. There is also the possibility that the task may have already been completed on a duplicate work request.

Recommendations

In the short term, identify a single GSA liaison through which all service requests are routed and institute a procedure for building managers to be made aware of the jobs scheduled in their respective buildings. This will minimize surprises and ensure that job sites are prepared.

GSA generally offers little or no feedback to customers following site visits for service ticket tasks irrespective of whether staff (or contractors) complete or fail to complete assigned tasks. GSA usually responds only to customer complaints as a barometer of satisfactory task completion. While this level of customer service is typical in several jurisdictions questioned, we recommend improving customer feedback. OPI however, observed that the high volume of service tickets and work orders makes it difficult for lead shop supervisors or project managers to complete daily customer follow-up. Consequently, customer follow-up should be the responsibility of field staff that directly interfaces with customers.

Recommendations

Require trades/contractors to inform customers of the status of tasks, (completed or incomplete and why) before departing the site. Where additional parts, personnel and/or tools are required, trades must also communicate this to the client before departure. Lead shop supervisors or project managers should then inform clients of the new task schedules and any further developments. On completion of the task, customers should sign off to indicate acceptance.

II. Work Requests Forms

There are approximately 11 versions of work request forms, none of which is computer generated from the work order systems. Some forms are general in nature, some are trade specific, while others are specific to service tickets or work orders. This large number of forms causes redundancy considering that the intake clerk rewrites much of the same information on multiple forms. Normal industry practice is to develop a single work request form for all types of requests. Consequently, OPI created the sample work request form presented in Figure 1.

Recommendations

Develop and institute a single work request form for both service tickets and work orders. Also, GSA should develop an electronic version of the form for departments to request work electronically. Over time, all paper requests should be phased out except for those departments with no network access.

III. Generating Internal Work Requests and Modifying Billing Data

GSA staff can generate service tickets and work orders anywhere within the process or modify data on existing requests even if such requests are closed. Shop supervisors, project managers and accounting staff can open new work requests to capture charges against a previously closed work request. There is no formal method of identifying duplicate service requests or controlling service request inputs to minimize project accounting errors, incorrect billing, duplication and inaccurate reporting. Newer work order computer applications can be used to detect duplicates through online queries. Although we do

not recommend severely limiting access, employees should not normally be allowed to open previously closed service orders and modify data without third party approval or oversight.

Recommendations

Continue to allow staff to generate work requests at any point along the process and re-open closed job orders. However, GSA should institute an approval and control process to properly manage these operations. For example, supervisory approval should be obtained before staff can make changes to any closed job order. Additionally, all work requests (irrespective of origin) should be held in a "pending review" file until they are thoroughly reviewed and approved for scheduling and job execution. Ideally, the approval process should include a search for duplicates, review for available resources, completeness of request and billing information. The approving authority should electronically approve the task and schedule its completion. Finally, the lead shop or project manager should approve any extension or modification to the project.

For this process to be successful, GSA should, as recommended elsewhere in this report, improve intake coordination, client communication and CMRSD software capability to detect and minimize work order duplication. This is best done through training, improved communication, intake centralization and technology upgrades.

IV. Work Coordination

OPI observed different processes for managing and tracking similar activities. Preventive maintenance and service calls are handled through the Facilities and Utilities Management Division (FUMD) but are not always tracked on the CMRSD work order system. FUMD may also create service tickets or work orders that are tracked on the CMRSD work order application. This division of work is less than optimal because coordination is inefficient and there is no central planning and scheduling function to integrate the four aspects of building upkeep (maintenance, service calls, service tickets and work orders). Normal practice is to integrate preventive maintenance (major and minor), service tickets, service requests and work orders into one centralized work management process to improve planning, coordination and tracking. This allows the business unit to easily and conveniently track building upkeep costs, schedule work, improve customer care and minimize duplication.

OPI also observed that GSA's plant manager, building managers, shop supervisors and project managers use different methods to request work and track work status. The main methods are by fax, traditional mail and telephone requests. Project managers sometimes input requests directly into the work order-tracking database. However, the method of choice largely depends on location, knowledge and use of the technology, security permissions and network access. In order to query a job status, the primary method is by telephone inquiry though clerks, lead shops or other GSA contacts. This method is time consuming and inefficient.

Recommendations

Work orders, service requests, service tickets and preventive maintenance tasks should be tracked and scheduled in a similar manner. OPI recommends that GSA plan and manage all these activities on a single work tracking system over the long term. This will simplify tracking, reduce costs, improve scheduling and job planning, track outstanding maintenance and optimize the use of department resources.

V. Service Request Routing

Customers may send work requests to the wrong workgroup in GSA. For example, work intended for the shops may sometimes be sent to design services. GSA staff must determine the correct recipient and

forward paper copies. As a consequence of not centralizing intake and using a predominantly paper driven process, there may be delays in reviewing work requests, increased risks of duplication, and loss of work requests.

Recommendations

In the immediate term, designate central intake points and inform all department liaisons. Coupled with the previous recommendation to create direct client online access, this will also help to speed the intake processes and reduce the risks of losing service requests.

Concerning intake, in the short term, GSA should continue to assign a single staff contact to receive and process work requests at the shops and a single staff contact for the remaining facilities. Each intake coordinator should ensure requests are properly filled out, clarify requirements, check for duplicates and forward the request to the appropriate staff for scheduling. Over the longer term, GSA should develop the capability for electronic submittal through a single intake coordinator, online review and elimination of duplicates prior to forwarding request for scheduling.

B. Work Request Processing and Approval

I. Integrating Technology and Work Processes

The work order system is used mainly to track charges associated with work requests and cannot be used for project management and planning. Additionally, paper-based and manual procedures still dominate the tracking and management processes. As an example, on receipt of a work request in GSA shops, the clerk transcribes the original request onto several forms to create a service order for each shop involved with the service request. The original request is entered into the computer system, a job number is obtained and the number is copied onto each service request. Supervisors later retrieve paper copies of service requests from the clerk for review and scheduling. OPI also observed that in some instances shop personnel request information regarding service requests from the intake clerk instead of making online queries. Some of these problems result because the current work order system is difficult and time consuming to use. Ideally, the initial service request should be entered directly into the database. Supervisors and project managers should electronically review and approve new, unassigned service orders and print requests only when necessary.

Recommendations

In the short term, train employees to make the best use of the available technology to increase productivity and minimize duplication. As previously recommended, GSA should develop and institute a single universal service request form (both paper and electronic versions) and abolish workgroup specific forms. Departments with no network access to the online work order systems should use a single paper form.

In the medium term, GSA could make service request forms available on the County's intranet. Ideally, each department liaison should have the ability to send service requests by e-mail and receive confirmation accompanied by a reference service request number. OPI also recommends that MIS investigate the feasibility of enhancing the software to allow shop supervisors, lead personnel, building managers and project managers to view unassigned work related to their workgroup and print requests on demand for field assignments.

II. Service Ticket Caps

GSA determined that requests with an estimated cost of $5,000 or less are service tickets and all others are work orders. Service ticket tasks can generally be completed in a few days and require no approval from OMB. OMB approval is required for work orders. GSA proposes to increase the cap to $10,000 in hopes of reducing the need for OMB approval and resulting delays. Increasing the cap also reduces delays if client departments are willing to forego requesting detailed cost estimates before authorizing work.

Recommendations

OPI makes no recommendation regarding increasing the cap on service tickets. OPI recommends that GSA discontinue the practice of obtaining budget approvals on behalf of client departments by working with OMB to transfer the budget approval process for department specific requests to the requesting department. We propose that in the medium term GSA provide cost estimates/quotations on a service ticket, close the service ticket after it is charged, and require departments to obtain budget approval for the project. On receiving the notice to proceed, GSA should generate a work order under which all new charges will be billed.

In the longer term GSA should develop/institute "parent-child" work order relationships where a single work order is used to track all charges by trade and project stage. This will eventually eliminate the need for interim service tickets.

C. Job Execution and Status Tracking

I. Coordination

At the time of our review, GSA did not hold regular work order planning meetings to determine priority and to coordinate efforts between workgroups. However, GSA recently hired a Work Order Coordinator who will track work order status and follow-up with OMB, the Department of Business Development (DBD) and other user departments. Additionally, the coordinator prepares monthly project updates (one line per project) following monthly meetings with project managers. GSA recently reinstated monthly meeting with project managers to reassess their progress.

Recommendations

Periodic high-level meetings are encouraged to realign priorities given the volume of work, changing priorities and limited resources available. GSA should institute at least monthly planning meetings with project managers, shop supervisors and division managers to assess progress, set job priorities (work orders and service tickets), solicit feedback, determine project status and assign resources accordingly. This should normally result in a comprehensive activity report to directors summarizing priorities, achievements, performance, costs and revenues.

II. Service Request Status Tracking

The work order application offers limited information regarding project status. For service tickets, tracking options are few and provide very little information. There are only four service ticket status options: open (blank status), completed, cancelled or closed. These options are not sufficient to accurately track progress because service ticket tasks are not always completed immediately for a variety of reasons, more so if the service ticket cap is increased to $10,000.

In the case of work orders, the status options reflect the routing of the request more than it does project status. The status options page available on the work order system offers 34 possible stages (including budget approval, design stages, permitting, procurement, bidding, etc.). This is problematic because the duration and specific activities occurring at each stage are not captured. For example, a project may show a status of "Design Services" but there is no indication of which workgroup in Design is handling the work order, the status of the work or problems encountered, and it does not track the number of days the project spends in Design. Additionally, supervisors and project managers provide no comments to explain project status within each project stage, which prevents complete management reports from being generated.

Recommendations

The options available to GSA are to investigate the feasibility of enhancing the existing work order system software or to purchase a new product. CMRSD may improve user friendliness by creating Windows-based overlays with drop-down menus, by removing status codes/abbreviations, and by providing a reduced number of choices in plain English words. However, OPI favors purchasing a new work order management system in lieu of an excessive program rewrite because the current program has very little project management capabilities.

GSA should also encourage supervisors and project managers to make accurate and timely comments at the various project stages to facilitate management reporting and monitoring.

III. Challenges to Completing Job Tasks and Client Follow-up

As noted above, GSA generally provides no follow-up communication on work status unless customers complain or make specific requests for information. GSA does initiate communication when client approvals, change orders, or project closeout activities require follow-up. GSA should ensure sufficient feedback to clients. However, this is difficult because of a huge backlog of incomplete tasks for which no work has begun or progress is slow. This may occur for several reasons:

a. A single project manager oversees multiple projects, (often more than five projects simultaneously) some of which are large complicated construction projects. GSA received an average of 29 work orders per month over the past 24 months and as a result, new work requests may not be addressed immediately.
b. There are more tasks than GSA can complete solely using in-house staff. Therefore, private vendor services have to be contracted. The protracted procurement and building permit processes significantly impact the quality of services received and the timeliness of job completion. Consequently, CMRSD must increase contractor supervision, thereby further reducing the time internal staff can devote to other projects.
c. A number of old, dormant or duplicate work orders are still "open" (approximately 400 work orders).
d. Work coordination, technology and process issues need to be improved.

Recommendations

Recommendations addressing client communication and feedback are addressed above. GSA can further reduce backlogs by:

- Revisiting staff requirements and balancing workloads. (OPI recognizes that it is difficult to recruit professional project managers and understands that GSA has taken steps to recruit new staff).
- Retraining staff to become proficient in new or enhanced software programs.

- Examining methods of reducing project time commitments such as reducing GSA's involvement in the budget approval process and providing complete information to the Department of Procurement Management and DBD in order to minimize rework.
- Continue to systematically close old, dormant and duplicate work requests.
- Review job estimate preparation and submittal processes to minimize delays.

IV. Project Management and Reporting

The work order system is also used to track and bill long duration construction projects. Such projects were historically managed by a custom-developed project management system that has since been abandoned. However, the current work order system is limited for use with project planning, scheduling or resource allocation. Additionally, the system generates few reports and only MIS or power users can customize reports or create new reports to meet management's needs. Consequently, staff manually generates management reports by updating the work order system, running the several queries for the desired data, and then manually inputting the data into Word or Excel.

Recommendations

MIS should develop management reports for the various levels of management in the short and medium term. To be effective, the effort should be cooperative and include MIS, directors, project managers, work order coordinators and supervisors as required. Users must determine the level and type of information required to effectively manage work, and MIS should dedicate resources to create these reports. This level of cooperation is essential whether GSA purchases a new system or upgrades the current system.

In the long term, management reports should be fully automated and easily configured to satisfy changing information needs, data and format requirements.

D. Invoicing and Billing

I. Invoice Routing and Approval

Vendors traditionally submit invoices to project managers or work group supervisors with the expectation that payment will be expedited. However, in some instances this may delay payments and could result in invoices being misplaced. GSA recently changed the invoice submission process to require all incoming invoices to be submitted to a central office where they are logged prior to distribution for review and approval. On approval, supervisors should return approved invoices to the central office to be forwarded to GSA Accounts Payable. Some vendors do not adhere to this procedure and continue to submit invoices directly to the workgroup authorizing work.

Recommendations

OPI recommends vendors submit all invoices through one of two clerks: one located at the Stephen P. Clark Center (SPCC) and another at GSA's shops. Both clerks should share the same database for logging and tracking invoices. Each notice to proceed issued to a vendor/contractor should provide a delivery address and other necessary billing instructions. All invoices received from these vendors must include a reference to the notice to proceed, job identification/description and the work order/service ticket number. When GSA receives an invoice, the clerk should acknowledge receipt, log the invoice (work order number, notice to proceed or purchase order number, invoice number, date, amount etc.), and forward it to the appropriate staff for review and approval. The reviewer then returns the invoice to the clerk to be forwarded to accounts payable. Supervisors and project

managers should be encouraged to ensure that vendors and contractors adhere to the new policy and cease sending invoices to individual shops or project managers.

Also, supervisors should have an easy method of informing clerks of the number and estimated amounts of outstanding invoices for a particular work request. This may prevent the need to reopen closed jobs and reduce duplication.

II. FAMIS/Work Order System Interface

There is no direct interface between FAMIS and the work order system. During each billing cycle the work order program generates a series of journal entries and support data printed on two separate printers. Journal entries include charges for labor and materials, the appropriate markup for all service tickets closed since the last billing period, and all work completed on work orders (open or closed) since the last billing cycle. An accounting clerk sorts and collates journal entries and support data and forwards the package to the OMB or the Finance Department as appropriate. OMB approves all billing that includes capital spending from CORF, while the Finance Department reviews all other transactions. After final approval, a Finance clerk enters billing data into the FAMIS accounting system where GSA accounts are credited and client department accounts are debited.

There are timing differences between FAMIS and the GSA accounts payable module. ITD uploads valid index codes to the accounts payable system weekly. However, these changes may not reflect in the work order database depending on the date of the change. Consequently, the work order module will create journal entries using invalid index codes that will ultimately be rejected by FAMIS. The Finance Department attempts to correct these errors when they receive paper copies of journal entries. Failure to correct these errors causes FAMIS to reject the entire journal entry (26 transactions) even if only a single transaction is incorrect. Additionally, changes made on journal entries that are fed into FAMIS are not automatically reflected on the work order system. GSA manually makes the required changes before the next billing cycle.

GSA could improve billing management by automating all billing and error reporting procedures. This will eliminate the manual sorting, printing, and editing processes, and allow for better accounting of GSA charges.

Recommendations

Develop an interface linking FAMIS, the accounts payable module and the work order system to automate billing and payments. Ideally, these interfaces should allow the work order program to upload billing data to accounts payable, which in turn should generate the required journal entries for downloading to FAMIS. FAMIS should ideally upload index codes daily. Where there are billing or data errors, FAMIS should generate an error report highlighting only those transactions that require correction.

OPI also recommends MIS develop billing codes to segregate CORF billing and allow OMB to electronically receive and approve these charges, thereby eliminating payment delays.

TECHNOLOGY ISSUES

A. Use of Software Packages for Work Order and Project Management

Including their limitations, existing systems are not fully utilized for several other reasons:

1. The work order application is used to capture charges related to work orders (labor hours, contract costs and materials), and not to manage work order fulfillment (routing, tracking, management reporting, planning, project management and fiscal control).
2. The programs are cumbersome and difficult to use by today's standards and there are no drop-down menus, and no point-and-click functionality. Users navigate the application using program function (PF) keys.
3. There is a lack of adequate user training.
4. Project status and adequate comments important for management are not being input.
5. Since some employees have not adjusted work practices to maximize the use of technology, the paper process still drives significant parts of the processes.
6. Easily accessible summary management reports were not created after the program rewrite more than three years ago. Reports are needed to assist in task management, cost and status tracking. Despite these limitations, some management data can be obtained through cumbersome processes, by navigating several screens and by manually transcribing data into other computer applications.
7. No project management/planning/scheduling application has been commissioned since the custom developed program was abandoned. Staff has been innovative and found a method to apply the work order system for billing and to partially track projects.

While CMRSD utilizes the work order application for portions of the construction management process, staff does not have a true project management program. In response, MIS developed a project management package in Microsoft Access. The program is not interfaced with the work order package or any other application and was not commissioned for field use. OPI reviewed the ease of use of the package and found it to be more friendly than the older packages but still cumbersome, time consuming and difficult to navigate.

Recommendations

In the short term, OPI recommends integrating the paper and manual process with the technology, and training staff to maximize the use of computer systems. This requires staff to modify work practices and become more comfortable with the work order application.

In the medium term, request MIS to recreate appropriate management reports consistent with the needs of the directors, supervisors and project managers as the system permits. This may also require simplification of data entry (particularly project status data) to make data entry easier. Additionally, managers should reinforce the need for accurate and timely updates.

GSA should also determine if the custom developed Microsoft Access project management package meets user needs and if so, investigate the feasibility and cost of integrating the package with the work order system including auditing, testing and commissioning the program.

Over the long term, a new application package for work order tracking, project management, planning and scheduling is inevitable.

B. Incompatibility Between Applications

As stated previously, current work order applications have no project management or scheduling capability, they contain very few available management reports, and they are time consuming, inefficient and limit the ability to perform on demand queries.

Historically GSA operated two separate custom programmed software applications: the first for project management and the second for work order management. Following the CMRSD merger of these two functions, a single integrated computer system is needed to maximize productivity. The project management application was never adequate and was abandoned and the new application developed in Microsoft Access was never commissioned. Additionally, MIS completed major modifications to the work order program in 1997 to correct billing program errors. Most of the pre-designed reports became obsolete and were deleted.

GSA requires a work order system that includes or interfaces to a planning and scheduling application to adequately manage projects, track service tickets, work orders and maintenance activities. Additionally, the application must have the capability to track detailed project status, allow easy report configuration, provide management summary reports, and allow easy integration of technology and process.

Recommendations

While there is no easy short-term solution, GSA should request MIS to investigate the possibilities of having the work order application generate the MS Word and Excel reports manually created by project managers and section managers. Over the long term, it is advisable to purchase software for work order tracking, project management, planning and scheduling, as opposed to in-house program development.

C. Unique System Capabilities

The custom developed work order application incorporates several unique features that are not normally found in off-the-shelf work order management systems. The program:

- Distinguishes between work orders and service tickets and creates journal entries such that only closed service tickets are billed each month while work orders are billed monthly as work progresses.
- Creates journal entries for billing purposes including time and material mark-ups using data downloaded from the accounts payable application. In traditional systems, this process is reversed such that work order packages upload data to the accounting system where billing activities are performed.
- Doubles as a time reporting system and ensures that staff account for at least 40 hours per week.
- Offers no link between separate service tickets or related work orders for a single project.

Recommendations

In the medium term, MIS should create interrelationships between service tickets and work orders related to a single project through additional coding or parent-child relationships. Over the long term, a new work order package with this capability and appropriate interfaces to GSA and FAMIS accounting packages is inevitable.

D. System Limitations

OPI compared the functionality provided by the current system to those desired by users and also to standard off-the-shelf work order programs. The results are presented in Table 1. The current application provides the capability to enter a significant amount of data regarding charges (labor hours, materials, work order routing and vendor invoices); however, very little capability exists for tracking, management reporting and planning, scheduling and fiscal control. The system cannot associate work requests related to the same project, track expenditures by project stage or detect duplicate service requests. On the other hand, new work order packages use drop-down menus to query or input data and usually include purchasing and inventory management capabilities at no extra cost. These systems allow easy data input/output capabilities and rapid user defined searches. Additionally, most off-the-shelf programs use relational databases that facilitate easy data query, rapid online reporting, and user customization and configuration that are not affected by releases of new software versions.

In addition to the high probability of entering duplicate work requests, there is also a high probability that service requests are inadvertently removed from the system because several people have deleting rights.

While the current system has several unique features, there is no interface to FAMIS and journal entries have to be manually entered. The process is therefore time consuming, inefficient and error prone. Additionally, the application is not user friendly, cumbersome, and requires considerable effort to enter or retrieve information.

Recommendations

Given the service requests volumes, resource limitations and lead time to procure any new software product, it may be prudent to attempt to make limited improvements to make the system easier to use in the interim. Options include the addition of Windows-based screens, easy access menus, drop-down boxes, interface with FAMIS (if required), and improved user training. Additionally, MIS should create effective management reports as required by division and department directors, managers and project managers. Even with these changes, CMRSD will also require project/construction management, scheduling and planning capability. Therefore OPI recommends GSA review the total cost of enhancement of the current system against the cost of purchasing a new and proven work management application prior to enhancing the older package(s).

OTHER ISSUES

Several factors external to GSA influence the work order management process and add significant time and expense. These include some procurement processes, project budget approval processes and obtaining building permits. Recommendations related to the budget approval processes were addressed above and will not be discussed in this section. Issues and recommendations regarding the remaining areas follow.

Interviews with GSA staff indicated that the procurement process presents major delays and results in inflated project costs and increased administrative load. Staff however, understand that these factors are outside GSA's control. A review of the construction management process indicates that a hypothetical project costing in excess of $500,000 requires the following pre-construction activities. Time estimates are conservative:

1. Work request, review and preliminary discussions (1 month)

2. Prepare estimate and develop design requirements (1 month)
3. Budget approval (1 month)
4. Request to advertise for design services and to select vendor (9 months)
5. Design completion and review (6 months)
6. Permitting dry run - Building Department (1 month)
7. Request to advertise for construction, select vendor and issue notice to proceed (9 months)
8. Permitting - Building Department (1 month)

The elapsed time since the client's request is in excess of 29 months. By this time the client may already be dissatisfied, project costs have escalated, and the initial job estimate is no longer valid. Projects costing less than $500,000 for which GSA can access the MCC and the Purchased Services Agreement (PSA) generally require GSA administrative time.

When GSA uses a contractor under the MCC, the Department of Business Development (DBD) should review the selection. DBD normally requires 20 days to review submittals for each project assuming there are no additional problems or need for legal opinion. Some GSA staff contend that this effort may take up to 40 days. One common misunderstanding among staff is the belief that DBD only verifies that small firms are Community Small Business Enterprise (CSBE) Certified and consequently, the process should be less than 20 days. Interviews with DBD indicate that the Department must perform several reviews and verification as required by County Ordinance 97-52 and subsequent addenda. CSBE firms must be certified annually and DBD periodically publishes and updates the list of certified firms. However, as required by County Ordinance 3-22, DBD must also give firms an additional five days to respond to questions and ambiguities in their submissions for work under the MCC. DBD also does the following:

a. Reviews all submission for compliance on every project involving multi-trade contracts. DBD verifies that all firms (prime and sub-contractors) are qualified CSBE and meet all other compliance requirements.
b. Reviews the schedule of participants and letters of intents.
c. Requests legal review where necessary. In many cases firms are certified but the support documentation provided by the firm is incomplete. Such firms cannot be automatically included or excluded from the contract until DBD reviews the circumstances. Numerous other ambiguities may result in DBD seeking legal reviews.
d. Monitors contractor performance and payments to sub-contractors.

GSA experiences further delays because of permitting requirements. Consequently, the Department assigned a full-time plans expediter to secure building permits. While the issues at the Building Department are outside of GSA's control, it must be noted that the Building Department is implementing process changes to reduce permitting delays.

OPI also found that GSA trade and professional staff spend considerable time assisting small businesses that are new to the County bidding process, unsure/uninformed of permitting requirements, quality standards and/or invoicing processes. This time is charged to clients, which increases project costs and results in inefficient use of staff time.

Recommendations

GSA staff should maintain constant dialogue with the Procurement Department to develop methods of reducing procurement delays and expediting projects.

GSA should also better understand the DBD review requirements and how to help minimize delays. Possible solutions include:

- Post and update the list of certified CSBE firms on the county's intranet. At time of interview, DBD was already taking steps towards full electronic access to this data.
- Understand the process by which DBD can allow GSA to proceed with procurement on MCC in specific cases where work involves a single trade, the firm is CSBE qualified and several quotations were reviewed.
- Endeavor to provide complete information to DBD at all times to avoid delays.
- Improve communications with DBD, become familiar with their process and jointly develop methods of expediting work.
- Provide contractor performance feedback to DBD to assist with future screenings and contractor selection processes.

In an effort to reduce the time dedicated to train new contractors, OPI recommends GSA, the Department of Procurement Management, DBD, Building and other departments jointly develop a training and familiarization program for small businesses. The program should include bidding requirements, building permits, quality standards and invoicing.

CONCLUSIONS

GSA operates several overlapping businesses under CMRSD but lacks a comprehensive computerized operating system to manage, track and monitor their performances. Consequently, business processes are not totally streamlined to make the best use of the limited resources available to the division. The current system is prone to errors and delays, and poses significant challenges to management to exercise good fiscal control and to balance revenues with expenditures. The work order system provides only limited capability to effectively manage small service tickets and work orders or to provide management reports in a simple summary manner. Additionally, the software is time consuming and difficult to manipulate; therefore, staff continue to rely on paper processes. Following the merger creating CMRSD, project managers have managed to adapt the work order package to track complex projects largely for billing purposes.

Since there are limited opportunities for upgrading the current work order system, acquisition of a modern, user-friendly error free package it inevitable. The current system is more than 15 years old and requires GSA to maintain specialized in-house support for the program. Additionally, the cost to program, debug, audit and implement the required enhancements and to retain qualified support staff may be prohibitive. GSA should purchase a new package that includes program planning, and a scheduling capability built into the application or interfaced with other planning tools. GSA will also be required to interface the new package to FAMIS and GSA's accounting applications as needed. All modern systems are usually supplied with a stores management (inventory) package and a purchasing package at no extra cost.

As GSA takes steps to improve work processes and provide appropriate use of technology in CMRSD, the Department should consider the following:

1. Automation is best contemplated after problems with work processes are corrected. OPI therefore recommends CMRSD improve the current work processes before automating. This

requires implementation of all short term and process-related medium term recommendations, reassessment of staff resources and provision of adequate training.

2. Carefully evaluate the technology options (costs, timing and risk factors) before determining if the current system should be enhanced to meet current and future needs. Compare this cost to the cost of purchasing and installing a comprehensive new work and project management system.

The long-term risks associated with enhancing and reprogramming the current system includes GSA's ability to retain and train MIS staff to design, code, test, debug, enhance, maintain and operate the custom developed systems. To date, GSA does not have a functional project management system, adequate project reporting capability nor seamless interfaces with associated program modules. Additionally, the current work order package is over 15 years old, and GSA discovered and corrected gross programming errors approximately only three years ago. This raises questions concerning the accuracy of the program but OPI was unable to verify that the system (both the rewritten and original portion) is error free.

Should GSA opt to purchase an established off-the-shelf system, such a system will take some time to specify, procure and install. However, vendor-developed systems present lower business risks, offer new product versions consistent with changing industry practices, and are increasingly user friendly. A new system will provide an array of easy-to-use capabilities not available on the current system for planning, scheduling, project management and management reporting. It must be noted however, that any new system will have to be interfaced to FAMIS and the GSA accounts payable modules where applicable and will not incorporate the time reporting feature available on the current work order system.

Finally, several County departments (Water and Sewer, Seaport, and Aviation) are currently considering purchasing off-the-shelf work order management systems to replace older systems that no longer meet the departments' requirements. GSA should consider coordinating with these departments to reduce procurement and maintenance costs.

ATTACHMENT III

Work Order Process Review

- Assessment of Work Order Management System Alternatives -

PURPOSE AND SCOPE

A high-level technology review was undertaken to identify software applications available from vendors that meet GSA's work order processing needs. This was designed to assist the General Services Administration (GSA) should the Department desire to explore procurement of new work management systems for the Construction Management and Rehabilitation Services Division (CMRSD).

METHODOLOGY

The Office of Performance Improvement (OPI) evaluated the summary application requirements for a fully functional program suitable for the activities undertaken by CMRSD. OPI then identified software packages based on their ability to meet these summary needs. CMRSD needs were identified during interviews with work order customers and CMRSD staff. Additionally, OPI identified typical baseline functionality based on visiting other facilities in Miami-Dade and viewing vendor demonstrations. OPI also requested selected CMRSD staff to complete a needs assessment survey. From these sources, OPI identified a laundry list of possible features CMRSD would require to complete building maintenance and construction tasks. Packages providing the stipulated functionality were assessed based on the following:

- User friendliness (easy data in/data out)
- Ease in software updates (version control)
- Work order management capabilities (reporting and tracking)
- Flexibility to help manage the various business processes within CMRSD (configuration management)
- Compatibility with FAMIS

RESULTS

OPI identified 187 vendors that have developed work order software packages. These applications were compared against established CMRSD needs, and software features were also clarified with vendors. Vendors were also asked to further describe capabilities such as customer feedback capabilities, inter/intranet capabilities and adaptability to Job Access for Windows System (JAWS); a voice over system currently in use in GSA. Additionally, vendors were requested to clarify their pricing policies for software acquisition and maintenance. Based on these criteria, six work order software packages were identified as providing the best fit with the identified requirements. Table 1 lists the six software packages (not in order of capability), vendors and estimated software prices. Table 2 lists all six software packages and describes how each application meets CMRSD's needs.

During our review, GSA demonstrated interest in software packages to assist its Facilities Management Division with space planning and related functions. OPI concurrently reviewed work order applications that may provide these functions; however, our review did not include Archibus as GSA previously evaluated this product. Three alternatives packages were identified for future consideration including Peregrine Systems (FacilityCenter), HCI Systems (Building Blocks), and PM Associates (ProTec). These systems enabled pre-planning of buildings through Computer Aided Design (CAD) without additional interfaces.

Table 1
General Services Administration
Work Order Process Review
Computerized Maintenance Management Systems Alternatives

Application	Vendor	Pricing
Web Work	Tero Consulting Ltd.	$7,000 plus $900/user
MAXIMO Enterprise	MRO Software	$7,500/user
Synergen Series	Synergen, Inc.	$75,000 plus $4,000/user
CHAMPS EAM	CHAMPS Software	$17,500 plus $10,000/user
MP5i	Datastream	$3,000/user
FM 1 INNOVUS	Caver-Morehead Systems, Inc.	$39,800

Note:
Pricing reflects application licensing costs only. Hardware, installation, maintenance and training costs are not included. Additionally, maintenance charges may be as high as 20% of package costs

.

ATTACHMENT IV

Work Order Process Review

- Work Order Processes in Selected Jurisdictions -

PURPOSE AND SCOPE

A limited review of work order processes in other jurisdictions and private firms was undertaken primarily to identify the computer packages in use and to gather information on overall practices concerning work order processing. The Office of Performance Improvement (OPI) gathered information through surveys, site visits, and phone interviews. Additionally, OPI obtained information from a previous Miami-Dade County Aviation Department survey of work order systems to supplement the new data.

METHODOLOGY

OPI distributed self-administered surveys to nine municipalities and private firms that operate non-manufacturing facilities. The survey's questions specifically focused on work order processing practices, software in use, software capabilities, outsourcing policies, customer access and work assignment processes. The survey was sent to the following entities:

Private Companies:

- ARAMARK
- General Motors Corporation

Governmental Agencies:

- Broward County General Services Administration, Facilities Management Division
- City of Indianapolis, Indiana
- Los Angeles County, California
- Maricopa County, Arizona
- Miami Dade Community College
- County of San Diego, General Services
- Seattle Executive Services Department, City of Seattle

RESULTS

Some entities did not return the survey immediately, however, follow up phone calls and local visits led the responses from six of the nine entities and the responses are summarized in Table 1. Data from Miami-Dade Aviation are presented in Table 2. Among entities we observed the following:

- The number of buildings managed ranges from 20 in Indianapolis to more than 1,000 in San Diego County.

- There is a preference for collecting client requests for services through central locations, although dispatching may occur from different centers if buildings are scattered.

- Respondents tended to focus on facilities maintenance service delivery and preventative maintenance, which they describe as their core business. Non-core services are usually contracted

and assigned staff is dedicated to contractor supervision and project management only. In contrast, the City of Indianapolis reported minimal contracting for services.

- Internal work tracking is done via computer and each organization either is using, or has expressed strong desire to use handheld Personal Digital Assistants (PDAs) and barcoding for more accurate, real-time tracking of time and materials and for generating work orders in the field. A national leader, Maricopa County has had a totally paperless operation for five years and was the first government jurisdiction in the nation to introduce bar coding for work order processing.

- Of the six organizations surveyed, three use Maximo, two use Peregrine-Facilities Center, and one uses Micro West AMMS software to track and manage facilities maintenance functions. Of the additional facilities surveyed via the Aviation Department, three chose Maximo and one is using Datastream.

- The software modules most consistently utilized are Purchasing, Inventory, Work Scheduling and Project Management.

- All software packages mentioned offer cost estimating, but the feature is not commonly used or, when used, is not relied upon exclusively.

- Only two respondents (General Electric and City of Indianapolis) billed customers for services. The City of Indianapolis uses the facilities management software as a stand-alone program for preparing and printing statements. Paper copies are forwarded to the accounting department for processing.

- Four of the six entities use or plan to use the management reports generated by their facilities management software. Maricopa and San Diego Counties do not use this software capability, however, San Diego uses InfoMaker for reporting and CrystalWriter to build reports.

- Organizations mentioned that their strengths are efficiency, responsiveness and work tracking expertise.

- Organizations specifically mentioned the critical challenges of overhauling processes, particularly human/organizational processes, communication, and eliminating old attitudes and beliefs before installing a new system.

Table 1
Miami-Dade County
Work Order Processes In Selected Entities

	Maricopa County Phoenix, Arizona	**County of San Diego San Diego, California**	**Jackson Hospital Miami, Florida**	**Miami-Dade Community College Miami, Florida**	**Building Authority City of Indianapolis Indianapolis, Indiana**	**General Motors GM Technical Center Warren, Michigan**
Number of buildings managed	275	1000+ buildings. 100 square miles. 500 occupied – remainder are parks, storage			20 buildings 2 million square feet	37
Initiation of work requests	Phone request to central dispatch.	New "Web Request," fax, phone, building log, or email	Phone or fax request	Phone or fax request to central office.	Phone request: 1000 work orders/month	Centralized phone call-in system
Types of work requests	Facilities maintenance	Facilities maintenance, discretionary work/ construction, renovation, and relocation.	Facilities maintenance	Facilities maintenance	"*One call shop*" All types, from parking lot stripes to roofing.	Facilities maintenance, renovation, construction, furniture and office relocation, conferencing, catering, and housekeeping
Centralized vs. decentralized services	Centralized dispatch from regional centers for less travel and speedier responses.	Both centralized and decentralized. County is divided into 12 work zones.	Centralized. All requests arrive at dispatch. Trades (housed in same bldg.) retrieve service tickets and are dispatched to site.	Central intake and dispatch by trade	Centralized intake and dispatch for each of two building groups.	Maintenance and smaller projects handled locally. The Capital Projects or Regional Engineering groups handle larger projects centrally.
How many employees work at fulfilling work requests?	108	10 clerical / administrative 50-60 shop & construction 50 craft crew 12 shop, plus construction managers and on-site building maintenance engineers	15		45	593 shop/construction workers 30 shop/construction managers

Table 1
Miami-Dade County
Work Order Processes In Selected Entities

	Maricopa County Phoenix, Arizona	**County of San Diego San Diego, California**	**Jackson Hospital Miami, Florida**	**Miami-Dade Community College Miami, Florida**	**Building Authority City of Indianapolis Indianapolis, Indiana**	**General Motors GM Technical Center Warren, Michigan**
Services Outsourced	Outsource about 70%. Overflow contracts and all monthly service contracts. All Preventive Maintenance is done in house.	Most small repairs or routine work is done in house. Percentage of work outsourced varies. Contract 98% of major maintenance. Outsource: large boilers, chillers, most carpet work, glazing, locksmith work, and most painting.	Very little maintenance work is outsourced.		None	About 90% of construction services and about 75% of major renovation jobs are outsourced. Only about 10% of smaller jobs are outsourced.
Who manages outsourced work?	A supervisor and staff manage contractors full time.	6 Planners/Estimators, Maintenance supervisors on site. Large jobs have project managers & inspectors	Facilities management	Facilities management	Director of Operations supervises any contracted work.	Either the local or the central facilities manager manages the work.
Centralize/ decentralized intake and dispatching?	Centralized	Mixed. Some requests go to on-site staff. Web requests sent to field crews, to estimators or to building maintenance engineers	Central	Central. Work is reviewed and ticket assigned to trades.	Central. Work Orders come to two centers. Dispatch is centralized from these points	Central
How do customers track job status?	Lots of face-to-face time with customers.	On site, or customer can track through building maintenance. Online requests can get minimal information on work order number and whether a crew has been assigned.	By phone using job number	Phone requests	Phone calls	Customers call the Help Desk or a building manger. Customers are also given hard copies of closed requests.

Table 1
Miami-Dade County
Work Order Processes In Selected Entities

	Maricopa County Phoenix, Arizona	**County of San Diego San Diego, California**	**Jackson Hospital Miami, Florida**	**Miami-Dade Community College Miami, Florida**	**Building Authority City of Indianapolis Indianapolis, Indiana**	**General Motors GM Technical Center Warren, Michigan**
Internal work tracking: Manual? Computer?	Computer	Computer	Computer	Computer	Computer	Computer
Software used for tracking	Maximo	SPANFM, Peregrine, Facilities Center	Maximo Enterprise for Facilities	Peregrine – Facilities Center. Phasing out "Service Call" package.	MicroWest AMMS	MAXIMO 3.0.3 mr
Other modules in tracking system	Purchasing, Inventory, and Project Management	Purchasing, work scheduling (not in use), project bidding, project management, inventory module, asset management, space analysis, resource scheduling, budget manager (wimpy), lease management, time reporting.	Purchasing, Inventory, Work Scheduling, Project Management	Purchasing, Inventory, Work Scheduling	Purchasing, Inventory, Work Scheduling Time reporting/Timesheet, Project Mgmt., Also Labor, Equipment, Tool Crib, and Budgeting.	Purchasing, Inventory, Work Scheduling, Time Reporting, Project Management
Interfaced modules or systems	None	Facility location, time system, CAD integrator – two-way link CAD drawing and space assignment (SPAN).	None	None	None. Stand alone operation. Print hard copy for city/county accounting system.	Temporarily interfacing with corporate materials inventory system.
Can the system estimate project costs?	Yes, but do not use it.	Yes. Can estimate based on numbers entered or on history- previous jobs. Most cost estimates are developed by project estimators	Not set up	Yes	Yes	Yes

Table 1
Miami-Dade County
Work Order Processes In Selected Entities

	Maricopa County Phoenix, Arizona	**County of San Diego San Diego, California**	**Jackson Hospital Miami, Florida**	**Miami-Dade Community College Miami, Florida**	**Building Authority City of Indianapolis Indianapolis, Indiana**	**General Motors GM Technical Center Warren, Michigan**
Is the system used for billing?	No. Capability is there, but clients are not billed back.	No	JMH does not bill back.	Not used	Yes	Yes
Can the system be used for management reports?	Yes. Do not use this capability.	Yes. Do not use. Instead, use InfoMaker for reports. Also use CrystalWriter, which gives 4-5 ways to build reports.	Yes. Very little utilization, however, plan to expand use.	Yes. Not used yet. This is a new system.	Yes. Well used.	Yes
Operational Strengths / Successes	Core business is bare bones and streamlined. Efficient use of central dispatch from regional locations.	Organization is now responsive. County offers customers a lifetime warranty for all work, although work is sometimes expensive.	Tracking, status updates, central dispatch, barcode scanning at stores.	Planning and tracking	Preventive maintenance program is key strength. Very proactive.	Corporate, local, and OSHA-required safety inspections are performed and recorded regularly.
Greatest challenges		Still fighting through organizational issues. Recently reorganized from 4 to 12 work zones	Developing user expertise. Finding a good implementation company.	Automated field data capture.	Overhaul work order processing. Still struggling with old ways of doing things. Recommends, "breaking old stone tablet" before installing new system. Get it over with!	Change from ingrained decentralized legacy methods to common processes and systems.

Table 1
Miami-Dade County
Work Order Processes In Selected Entities

	Maricopa County Phoenix, Arizona	**County of San Diego San Diego, California**	**Jackson Hospital Miami, Florida**	**Miami-Dade Community College Miami, Florida**	**Building Authority City of Indianapolis Indianapolis, Indiana**	**General Motors GM Technical Center Warren, Michigan**
Changes desired?	Want new CMMS system, new handheld system. Maximo version in use is rigid, out- dated, was great in its day.	Desire greater electronic interface. Want to be able to bill shared work, like building AC or water and still bill departments for discretionary work. SPANFM has the capability but isn't tied to County accounting system. Want to utilize handheld Personal Digital Assistants (PDA) with barcode capability. Eliminate data entry. Can generate WO on the fly.	Include PDAs	Phasing out "Service Call" and installing Peregrine Facilities Center.	Equipment. "Not enough electronics"/person. Want PDAs, communication. Want to add bar coding and imaging.	On-line request of jobs by customers.
Changes planned?	New CMMS system. New handheld system.	Information Technology is outsourced. Going to Oracle Financial and PeopleSoft for HR. Upgrading SPANFM in and will offer Palm or Wand capability.	None: Learning to use the new package.	Commissioning new system.	Plan to add imaging and bar coding.	In process of fully implementing all elements of Maximo, PB Views, and CAFM

Table 1
Miami-Dade County
Work Order Processes In Selected Entities

	Maricopa County Phoenix, Arizona	**County of San Diego San Diego, California**	**Jackson Hospital Miami, Florida**	**Miami-Dade Community College Miami, Florida**	**Building Authority City of Indianapolis Indianapolis, Indiana**	**General Motors GM Technical Center Warren, Michigan**
Additional Comments	TOTALLY PAPERLESS OPERATION. Maximo features this electronic system as a national model. Was first in nation and still unique. Six years ago 1st in nation to introduce bar-coding system for work order processing.		Consider using FME for installation. – Easy, good support, and cheaper.	System costs $12,000/user plus 20% maintenance	Check out system all on line. Don't buy software; just rent use on internet $40/mo/user. www.tapware.com Also highly recommends AMMS. 1 (800) 996-9699 – JR or Joanie.	

Table 2
Comparison Of Work Order System
Excerpts from Data Supplied by the Miami-Dade Aviation Department

Organization Name	How do You Track Work?		Software Used	Priorities Used	How Priorities Determined?	Expenditures Tracked?		How are Work Orders Initiated?	Centrally Dispatched?	
	Manually	Computer				Yes	No		Yes	No
Disney		X	Maximo Enterprise for Facilities	P5 to P1	Guest Safety & Emergencies P5 down to PM's P1	X		Telephone or FAX through the individual dispatch centers at each resort.	X	
Florida International University		X	Maximo Advantage (Chief System-support will cease in approximately 1 to 1 ½ years)	P1, P2, P3	Emergency, Urgent or Routine	X		Telephone or FAX through the dispatch center	X	
Fort Lauderdale Airport – Individual in charge of system will be Gary Hofer			In process of purchasing Maximo							
GSA		X	Custom written program using RPG	No Scale	Based upon Personal Persuasion (Big Dog Syndrome)	X		Telephone or FAX	X	
Jackson Memorial Hospital		X	Maximo Enterprise for Facilities	P1, P2, P3. Can be customized to anything your want.	WO Center treats all requests as P1. Supervisor determines when to accomplish.	Yes, Tracks labor hours, inventory (barcode) and more. Fully customized by user.		Telephone or FAX through dispatch center	X	
Miami-Dade Community College	X	X	Service Call – not happy with software, looking for a replacement	No set priorities	Work accomplished at supervisors discretion.	X		Trouble reports through Campus Services	X	
Seaport	X	X	Currently accomplished by cost accountant. Planning to purchase DataStream software	No set Priorities	Work accomplished at supervisors discretion.	X		Tenants telephone or FAX secretary. Other than routine work generated by supervisor.		X

Excerpts from the GSA Work Order Review Report
In preparation for the Thursday, May 10 Meeting GSA, OPI, DBD

OTHER ISSUES

A. External Factors

Several factors external to GSA influence the work order management process and add significant time and expense to the process. Four main areas are a) procurement processes, b) use of the Miscellaneous Construction Contract (MCC), c) the budget approval processes and d) obtaining building permits. Recommendations for improvements in the budget approval processes are addressed elsewhere and will not be discussed here. Issues and recommendations regarding the remaining three areas follow.

Interviews with GSA staff revealed that the procurement process presents major obstacles and staff recognizes that this inflates project costs and adds to the workload. Staff however, understand that these factors are outside of GSA's control. A review of the construction management process indicates that a hypothetical project costing in excess of $500,000 requires the following pre-construction activities. Time estimates are conservative:

1. Work request, review and preliminary discussions (1 month)
2. Prepare estimate and develop design requirements (1 month)
3. Budget approval (1 month)
4. Request to advertise for design services and to select vendor (9 months)
5. Design completion and review (6 months)
6. Permitting dry run - Building Department (1 month)
7. Request to advertise for construction, select vendor and issue notice to proceed (9 months)
8. Permitting - Building Department (1 month)

The elapsed time since the client made the request for service is in excess of 29 months. By then the client may be dissatisfied, project costs have escalated, and the initial job estimate is no longer valid. Projects costing considerably less than $500,000 for which GSA can access the MCC and the Purchased Services Agreement (PSA) generally require less preparation time.

When GSA uses a contractor under the MCC, DBD must review the selection. DBD normally requires 20 days to review submittals for each project assuming there are no additional problems or need for legal opinion. Some GSA staff contend that this effort may take up to 40 days. One common misunderstanding among staff is the belief that DBD only verifies that small firms are Community Small Business Enterprise (CSBE) Certified and consequently, the process should be less than 20 days. Interviews with DBD indicate that the Department must perform several reviews and verification as required by County Ordinance 97-52. CSBE firms must be certified annually and DBD periodically publishes and updates the list of certified firms. However, as required by County Ordinance 3-22, DBD must also give firms an additional five days to respond to questions and ambiguities in their submissions for work under the MCC. DBD also does the following:

a. Reviews all submission for compliance on every project involving multi-trade contracts. DBD verifies that all firms (prime and sub-contractors) are qualified CSBE and meet all other compliance requirements.
b. Reviews the schedule of participants and letters of intents.
c. Requests legal review where necessary. In many cases firms are certified but the support documentation provided by the firm is incomplete. Such firms cannot be automatically included or excluded from the contract until DBD reviews the circumstances. Numerous other ambiguities may result in DBD seeking legal reviews.
d. Monitors contractor performance and payments to sub-contractors.

GSA experiences further delays because of permitting requirements. Consequently, the Department assigned a full-time plans expediter to secure building permits. While the issues at the Building Department are outside of GSA's control, it must be noted that the department is implementing process changes to reduce permitting delays.

OPI also found that GSA trade and professional staff spend considerable time assisting small businesses that are new to the County bidding process, unsure/uninformed of permitting requirements, quality standards and invoicing processes. This time is charged to clients, which increases project costs and results in inefficient use of staff time.

Recommendations

GSA staff should maintain constant dialogue with the Procurement Department to develop methods of reducing procurement delays and expediting projects.

GSA should also better understand the DBD review requirements and how to help minimize delays. Possible solutions include:

- Post and update the list of certified CSBE firms on the county's intranet. At time of interview, DBD was already taking steps towards electronic access.
- Understand the process by which DBD can allow GSA to proceed with procurement on MCC in specific cases where work involves a single trade, the firm is CSBE qualified and several quotations were reviewed.
- Endeavor to provide complete information to DBD at all times to avoid delays.
- Improve communications with DBD, become familiar with their process and jointly develop methods of expediting work.
- Provide contractor performance feedback to DBD to assist with future screenings and contractor selection processes.

In an effort to reduce the time dedicated to train new contractors, OPI recommends GSA, the Department of Procurement Management, DBD, Building and other departments jointly develop a training and familiarization program for small businesses. The program should include bidding requirements, building permits, quality standards and invoicing.